



Model: BUF-01

Dual Voltage Buffer with High Current Drive

Features

- Dual Fully Independent Channels
- Output drive of 200 mA per Channel
- ± 10 V True Differential Inputs
- Low pass filter to remove high frequency noise.
- 24 VDC Powered (9-36 VDC)
- DIN Rail Enclosure

Applications

- Valve driver
- High current drive output
- Differential to single-ended conversion
- High accuracy voltage buffering
- LVDT/RVDT Excitation

General Description

The BUF-01 Voltage Buffer is a dual channel buffer capable of driving up to 200mA⁴ of current on each channel at up to ± 10 V output.

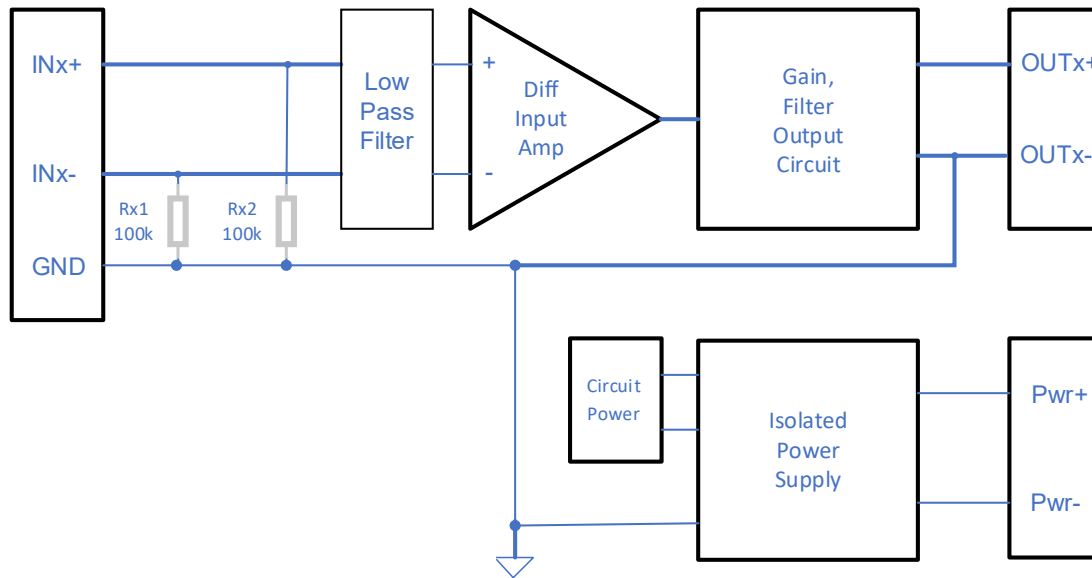
The buffer has a 2nd order low pass filter with 3 dB point of 120kHz¹ to remove high frequency noise.

The unit's differential inputs are built to withstand high DC over-voltages up to ± 50 VDC and greater than ± 100 V transients. Gain³ of the unit is 1 allowing for minimal insertion issues.

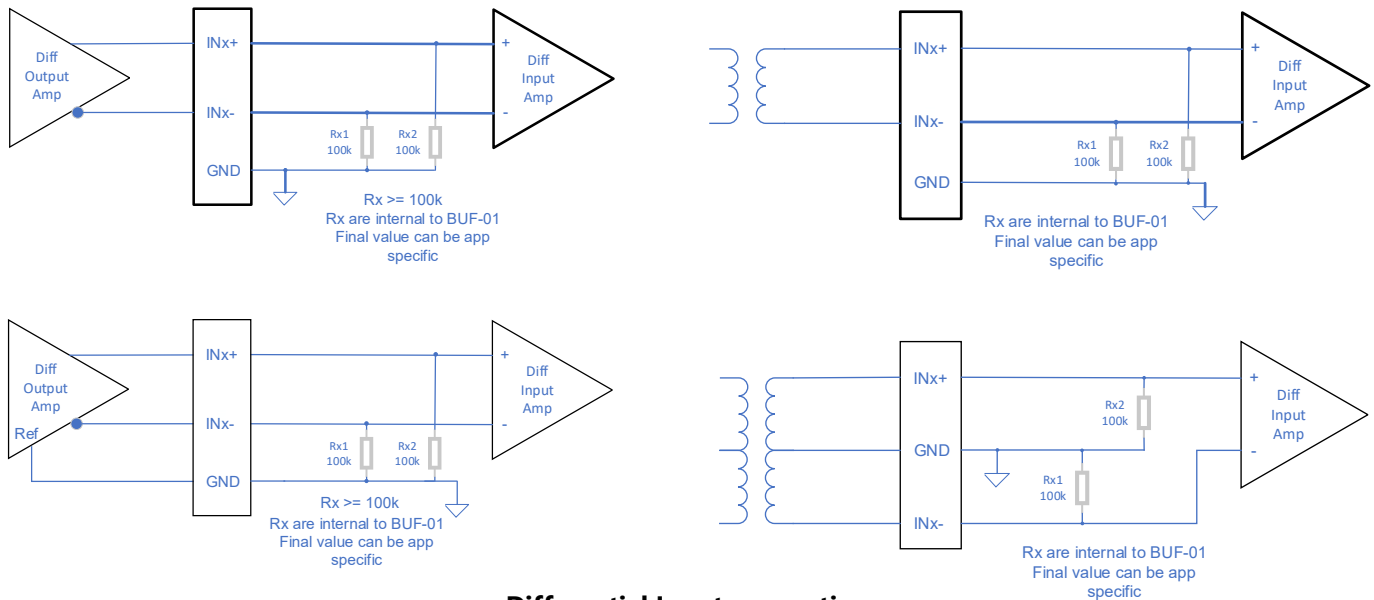


Key Specifications

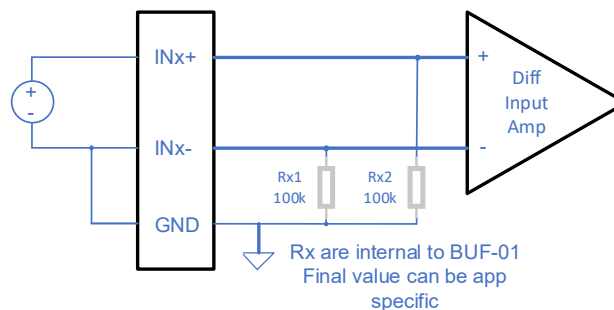
- Output ± 10 V with up to 200 mA
- Gain accuracy to $\pm 0.04\%$
- Voltage offset ± 3 mV Typ; 5.2mV Max
- Differential input with ± 50 VDC input protection.
- 100k Ω input impedance².
- ± 10 V output settles in 3 μ S to 0.1%
- 24 VDC Powered



Block Diagram



Differential Input connection



Single ended Input connection

Input (Channel 1, 2)

Input Range: ± 10 Volts, true differential input

Absolute Max input: ± 50 Volts DC; 100 V impulse

Input Impedance : 100k Ω , 30 G Ω available (consult factory)

Outputs (Channel 1, 2)

Voltage Outputs: ± 10 Volts at 200 mA output current max, 200ma at 25°C at higher operating temperatures current rolls off to 100mA at 70°C

Input to Output Step response Settle time to 0.1%: 3 μ S typical including propagation delay, 10 V Change

Propagation Delay: 50ns typ

Maximum Slew Rate: 15 V/ μ S (-10V to 10V in 1.33 μ S)

Output drive stage is capacitive load tolerant and contains flyback diode protection.

Power

Input: 24 VDC Nominal (9-36 VDC Range)

Power Consumption: 15 W max, 1.2 W typical with no load.

Isolation: 1500 VDC, Power to Input or Output

Filter

The 2nd order filter has a 120kHz 3 dB (± 10 %) operating

Accuracy

Gain Accuracy (G=1, DC Input) : $\pm 0.04\%$

Voltage Offset (G=1) : ± 3 mV typ ± 5.2 mV max;

Voltage Offset Temperature Drift : ± 7 μ V/ $^{\circ}$ C typ

Filter nominal attenuation effect at 10% of 3 dB cut-off: -0.037 dB

Environment

-40 to 70 $^{\circ}$ C operating, -40 to 85 $^{\circ}$ C storage

Options

¹Custom Low pass filter 3 dB point (consult factory)

²Custom Input Impedance (consult factory)

³Custom gains (consult factory)

⁴Higher output current (up to 400mA) (consult factory)

